MARINE REVIEW.

VOL. IV. CLEVELAND, OHIO, THURSDAY, JULY 23. 1891. No. 4.

Lake Freight Situation.

Ore freight have reached 80 cents from Escanaba, with Marquette, Ashland and Two Harbors on an equal footing, the rate from all three of the Lake Superior ports being $1. The disposition is still to move all the ore possible and it is not probable, notwithstanding the weakness in grain freights, that there will be any falling off in carrying prices on ore. The Escanaba rate, however, is not strong at 80 cents, as it was established by an outside shipper and has not been paid in all cases. The coal movement has been restricted from several causes and, in sympathy with the reduction in rates at Buffalo, soft coal freights are lower in a few cases. The Milwaukee rate has been reduced to 55 cents. Other rates are 45 cents to the head of Lake Superior and to Marquette, 55 cents to Portage, Milwaukee and Green Bay, 45 cents to Escanaba and Lake Huron ports, 35 cents to St. Clair river ports and 30 cents to Detroit.

Duluth had on Saturday last 1,335,802 bushels of wheat as against 1,386,373 bushels on the corresponding date a year ago. The freight rate is reported at 2½ cents but there is little being done in the way of shipments. Ashland shippers of lumber are paying $2.50 to Chicago.

A Big Boat and a Valuable Cargo.

Mr. Woodruff, managing owner of the steel steamship E. P. Weed, is on the way up with the boat on her present trip to Lake Superior. He is considering the advisability of putting her in the ore trade for the balance of the season. She has been running in connection with the Northern Steamship Company's fleet. The Weed is probably as fast a freight boat as there is on the lakes. Her owner claims 16 miles an hour for her. Mr. Wheeler, her builder, says she can make 14 miles an hour. If the Weed falls in with the E. C. Pope at any time during the season a trial of speed may be expected and the result will be looked to with interest. She is well officered, Capt. W. H. Campau having an able associate in Engineer Root.

In years past the insurance companies doing business with the copper producers of Lake Superior placed a limit on the amount of the mineral to go aboard a single boat. It would seem that the increase in value of lake carriers and their staunch build has removed this restriction, as the Weed on her last trip took from Portage to Buffalo 2,200 tons of refined copper valued at $611,000. It was part of a large quantity of the metal recently sold for export by the Calumet and Hecla company. The boat and cargo represented a combined value of about $851,000, as the owners of the Weed are said to have paid $230,000 for the boat and then expended about $10,000 in extras.

In the Record of Lake Superior Disasters

The sinking of the Pontiac gives all three of the big Canadian Pacific passenger boats a place in the history of marine disasters on Lake Superior. In July 1883 the Alberta sank the Osborn and five lives wers lost. Two years later Nov. 7, 1885, the Algoma was stranded on Greenstone island, one of the group of small islands northwest of Rock Harbor, Isle Royale. Sixteen or more lives were lost in this accident and the boat went to pieces later. The sinking of the Pontiac by the Athabasca, although attended by no loss of life, is the most costly accident that the lakes have seen in the past two years, as the boat and cargo were valued at about $225,000 and it will probably take $75,000 to $100,000 to make good all damages.

The sinking of the Pontiac recalls most forcibly the loss of the Osborn. She was run down by the Alberta in a fog on Lake Superior while on her way from Marquette to the Sault with a cargo of ore. The Osborn was owned by Capt. W. C. Richardson and others of Cleveland and was sailed by Capt. Thomas Wilford of Lorain, now in command of the Cleveland Rolling Mill Company's steel steamship J. H. Wade. The legal fight that followed the collision was one of the most interesting in the history of lake navigation. The trial of the case cost $7,000 and resulted in a division of damages. The outcome was, however, generally pronounced unfair to the owners of the Osborn, as it had been shown that the big steamer was moving at a high rate of speed in a fog. Judge Brown, before whom the case was tried in the district court at Detroit, is said to have based the strange decision on the fact that the Osborn had left Marquette in severe weather.

Work for all Floating Property.

The following is from the current issue of the Iron Trade Review: "There are at this writing quite a good many craft that have not gone into commission this season, the low freights paid thus far enabling only the larger carriers to do business with any sort of economy." Our esteemed neighbor, although at all times showing a disposition of favor to lake interests, prints this sentence in an article that would indicate a decline in freights "when the entire lake fleet comes into commission," but it is evidently misinformed regarding the situation. There is not a serviceable freight boat on the lakes that is not in commission at present and the ruling rates of freight are more profitable than had been expected by the most sanguine among the vessel owners.

May Abandon the Pontiac.

The sunken steamer Pontiac has been examined by divers and conflicting reports have been made regarding her condition. The owners are considering the advisability of giving up the boat and all that pertains to the accident, collision or collision liability, to the underwriters. She is insured to the top notch, partly in the English Lloyds and partly in regular companies. Pictures of the Athabasca at the Sault with the Pontiac's turtleback deck over her bows have been shown here, and they represent a very strange sight.

An Economical Trip.

The whaleback steamer Wetmore, which arrived in Liverpool Tuesday, was fifteen days from Montreal, but only about eleven days in actual time of crossiug from Sidney, the Gulf of St. Lawrence coaling station. The distance from Montreal is 3,000 miles. The Wetmore made the passage from Sidney on 230 tons of fuel. There is probably not another freight boat of her capacity, 90,000 bushels of grain, on the Atlantic that does not require 500 tons of fuel for such a voyage. Her machinery was made on the lakes by S. F. Hodge & Co. of Detroit. The boat's speed on this trip was probably about 11 miles an hour, and at this speed not more than three-quarters of a ton of fuel per hour would be required.

Low water—The Government Records.

Low water in the connecting channels of the lakes has had a marked effect on cargoes, especially from Lake Superior, during the present season. In the St. Mary's river below the canal locks, the water during June was but 282.6 feet above sea level and this stage was the lowest recorded by canal officials since 1870, when, as it would appear from blue prints furnished by Supt. Wheeler, in charge of the canal, official records were begun at that point. This stage is 8 inches below the surface elevation in June of last year and more than a foot below normal. The same is found from private records kept in the Detroit and St. Clair rivers, and there is a general expression of surprise that the water this year, instead of showing the usual rise after the opening of navigation, is still on the decline.

The record of changes in the water level kept at the office of the St Mary's Falls canal forms a most interesting study. The canal officials can furnish on an immediate request prints of water level curves, platted from observations taken on St. Mary's river below the canal locks, and on Lake Superior, above the locks, and showing the stage of water in either case for the past twenty-one years. The plat shows in a full line the elevation of the surface by months during all of these years, while a dotted line shows the mean annual curve, as derived for the period given, which is obtained by platting the mean of all the January means for each January, the mean of all the February means for each February, etc. Thus the vertical distance from the dotted line to the full line at any point in the plat shows the amount the water was above or below its normal height at the time. In 1876 the water was at a great height, when during July and August the stage was 586 feet above the sea level, or more than 3 feet above the present surface elevation. A gradual lowering of the surface followed, excepting during summer months, from 1876 to 1879, when the water was almost as low as at present. Again in 1885 and 1886 the vessel owners had what were called years of good water but the record during the months of navigation since 1886 shows at all times a loss of about a foot.

Detroit River Veterans.

Bois Blanc island and the Lime-Kiln crossing with the shoal spots surrounding them, are points in the Detroit river well known to the lake navigator, and there are few among the vessel men who do not know the light keepers whose lives bear a close relation to the history of these places. Capt. Andrew Hackett, keeper of the Bois Blanc light, and Duff & Gatfield, river pilots during the years before the Lime-Kiln crossing was built, are men who have taken a quiet part in matters of the highest importance to the lake marine. There are few, if any, points on the river from the city of Detroit to Bar point regarding which these veterans in water service can not give accurate information as to depth of water, rocks, extent of shoals, and everything that is necessary to render navigation safe for deep-laden vessels. Capt. Hackett, now a man well up in years, took the Bois Blanc light from his father, and has kept it for the Canadian government ever since, while Messrs. Duff & Gatfield, born on the Canadian bank of the river, have followed a calling somewhat similar in the vicinity of the island. Hundreds of vessels were piloted by them over the shoal places in the river before the American government put a full million into blasting the rock at the crossing. They have since maintained ranges and float lights marking the different channels, and their great fund of information regarding the river is at all times serviceable to the vessel owners.

It was to these men that Capt. George P. McKay applied for information a few days ago when the Menominee Transit Company's steamship Grecian struck an obstruction on the course two miles in a northwesterly direction from Colchester reef. Capt. Frank Hackett, of the tug International, who is a brother of Capt. Andrew Hackett, and who has also seen many years of service near the mouth of the river, recalls the sinking of a number of vessels in this vicinity, among them the barge Ottawa, schooners Sergeant and Morning Star, and brig Allegheny, all bound up with coal; the scow Harriet, stone laden; the schooner Union Jack, bound down with corn, and the schooner Forest Queen, light. As pieces of oak were found clinging to the Grecian's bottom it is thought that she struck one of those sunken hulls, and an effort will be made to find the obstruction.

Low Water is the Cause of Light Loads.

EDITOR MARINE REVIEW: Many vessel owners seem to have the impression that the decreased depth of water from last year in the Sault canal is largely owing to the platforms or timbers said to have been placed in the lock the past winter. The timbers were said to be 8 inches high, which had the effect of reducing the loaded draught of vessels to that extent since last year, and the last 8 inches to a large craft means very much. Large steamers are compelled to come through the locks with a reduction of cargo from that carried in 1890 of from 200 to 500 tons. It seems that there was a false impression, however, as the following letter will explain:

UNITED STATES ENGINEER OFEICE,
DETROIT, Mich., July 18, 1891.

B. L. Pennington, Esq., Cleveland, O.

DEAR SIR: I have just returned from Sault Ste. Marie, and find yours of the 14th inst., in regard to the wooden platforms built in the lock of St. Mary's Falls canal to protect the lower miter-sills. These platforms were not built last winter, but the winter before. They were there all last season, and all that was done last winter was to repair them. I do not hesitate to say that but for these platforms navigation through the lock would be destroyed within twenty-four hours. They are just sufficiently high to accomplish their purpose, and if built of iron would have to be equally high. I leave you to estimate the effect upon the bottom of an iron or steel vessel. Yesterday morning I saw a vessel drag over the platforms and after clearing them settle more than three inches deeper into the water. Picture, if you can, what would have been the effect upon the miter-sill of such an operation if the platforms were out of the way.

The smaller cargoes which your vessels now carry, as compared with those of last year, are due to a lower stage of water. I have just examined the water gauge record for one month back from July 14 (the date of your letter,) and find that the average depth of water for that period has been 9 inches lower than during the same period last year. This corresponds very well with your remark that your vessels are obliged to load 8 inches shallower. The present condition of affairs is due to the low water in Lake Huron, which is nearly 1 foot 5 inches below the mean stage at this season of the year. This being the fact it is quite unnecessary to look further for an explanatiou.

I am as anxious as any one to obtain some relief, but I fail to find any in sight. It certainly is unpleasant for me to stand watch and ward over our one lock to defend it from the destruction that would overtake it in case of any relaxation. As I said above, the removal of the platforms would result in a broken miter-sill within twenty-four hours and the lock would be useless. The use of the platforms has saved the lock during the last two years of low water. Very respectfully,

O. M. POE,
Colonel. Corps of Engineers,
Bvt. Brig. Gen. U. S. Army.

Gen. O. M. Poe has always been loyal to the commercial interests of the lakes and has certainly done all he could to make the canal locks the most effective possible in aid of navigation, at the same time protecting them from possible injury, than which none are and should be more interested than vessel owners themselves. Injury to the locks means delay and loss to the vessels. Destruction of the locks would "knock us out in the first round."

B. L. PENNINGTON.

Cleveland, July 22, 1890.

Improved Waterways and Better Margins of Profit.

EDITOR MARINE REVIEW: We have reason to believe that great good will come from the congressional visit of inspection to the lakes. The representation in the delegation of members from several of the states shows that the whole country is becoming acquainted with the magnitude of the commerce of the great lakes and is also aroused to the necessity of deepening to 20 feet and widening proportionately all waters connecting the lakes. It is evident also that there is a marked disposition now to eventually continue such a waterway to the Atlantic, to the end that the thirty millions of tons of the products of our soil and mines may be delivered to the markets of the world at a cost greatly in our favor when compared with that of other producing nations. Considering the great natural advantages which we possess as a nation, we would indeed be remiss in our duties as American citizens should we fail to avail ourselves of such opporunities for our advancement.

The prosperity of any considerable portion of our country can no longer be considered local in its influence. The advent of railroads and the telegraph has proven the importance of such influences throughout our entire land. When other producing nations of the world are brought into close competition with our own and they feel that a reduction in prices is necessary for the maintenance of their position in the markets of the world, they are obliged to resort chiefly to a reduction in the price of labor, which experiment is often dangerous and always distressing to the labor element. In a country with resources like ours, however, we are enabled to conform to the necessity of lowering prices in the markets by improving

our waterways to an extent that will enable us to transport commodities in large cargoes and thus lower freight rates so materially as to bring the producer and consumer practically together. We are accordingly bettering the condition of the producer, maintaining our advantage in the market and fostering the labor interests at the same time The lake interests will not contend that liberal appropriations by congress in aid of transportation by water is the entire business of our government, but we do claim that whatever tends to develop our resources is an important element in the direction of prosperity and should receive the careful consideration of those to whom we intrust our welfare.

We would certainly consider a colony of farmers very improvident who, after drawing insignificant loads to market over miserable roads and finding they could not compete with those from a different direction who worked over improved highways, would resort to a reduction in the price of farm labor instead of putting the roads in proper condition for larger loads with less expense. Yet were we to cease our efforts for the improvement of our waterways we would certainly be compelled to resort to some other method of cheapening transportation, and there is certainly none so much in harmony with the best interest of the country as the improvement of waterways. In no other way but through personal observation could these gentlemen, the members of congress, gain so much valuable information with regard to the needs and necessities of liberal appropriations. It is to be hoped, therefore, that they will in their consideration of these improvements take a broad view of the benefits to be derived from favorable legislation, bearing in mind the fact that the carrying interests of the lakes are only benefited in a general way like all others; that their net returns will not be enhanced by a 20-foot channel but, being engaged in this branch of industry, the duty of keeping in line with the demands of the times devolves upon them. J. STONE.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., July 23.

Vessel captains are becoming quite too obstreperous on Chicago river. If their boats are at dock unloading or loading and lie in such a position as completely closes navigation they have been refusing to move during working hours, even though they keep fifty other boats from passing. They have defied the harbormaster to move them, and these representatives of the city authority have been reviled on many occasions. It has been getting worse all this season, owing to the control of the Chicago river, which has been assumed by the general government. Those vessel captains who rule as kings on their boats, should remember that the city of Chicago denies the right of the general government to control Chicago river, and that all the ordinances of the city are still in force. It is just such tactics as are now pursued by these high and mighty captains, that have kept the lake marine from obtaining recognition and consideration in Chicago. Owners who send their boats here would do well to caution their men that decent behavior with due consideration for the rights of others in Chicago river is the proper thing. This is needed but for a few, to be sure, as most vessel masters are gentlemen, but once in a while there is one who sees nothing but his own interest and would not turn his hand over to accommodate his best friend. The harbormaster was instructed this week to arrest all captains who refused to move when ordered and somebody will soon find that it is best to obey orders from the city's representatives for a time yet.

The other day the captain of a small lumber schooner told a harrowing tale of how he had run on some mysterious obstruction inside the exterior breakwater,and he thonght he had hit the wreck of the lost Thomas Hume. His boat went into dry dock for repairs. The papers happened to print the story, and Commander Ludlow, in charge of this light-house district, read the item, and of course began to find out what was in the way. He soon found out. The thing that was in the way was the breakwater itself, and the schooner in question had damaged the outer end and greatly injured herself. The near-sighted skipper who thought he had hit the Thomas Hume, had evidently been concocting a yarn to save himself from having collided with a breakwater.

The City of Milwaukee tried the experiment of giving excursions on Sunday from Milwaukee to Chicago. The scheme was given up last Sunday. The excursions were wrong end first. Had they been given from Chicago to Milwaukee they might have proved a great success.

Grain rates went to pieces Monday but rallied slightly the next day. Vesselmen have been quite too anxious to crowd in their boats on the market, which could not stand any such pressure. The grain was skinned out so rapidly that it was soon gone and the fellows who came last were scarcely in it. As the call for boats in the grain trade reacted in an advance on ore, no one ought to find fault long. It now seems that practically every bushel of grain is going to be rushed to market before the new crop comes into competition with the old. Grain freights therefore depend upon the receipts of grain here. The receipts early in the week were surprisingly large. If that keeps up there will be plenty of business for the boats, but if a falling off comes, vessels will go begging.

The lake line agents last Saturday advanced the wages of 'longshoremen from 20 to 25 cents an hour, to take effect August 1. The advance was made voluntarily. The men had been completely routed after a three week's strike for this same increase in wages. It is not often that strikers after they return to work are freely given the wages they had been fighting for.

Canal street bridge will remain where it is for some time to come. Monday night the commissioner of public works recommended to the city council that the bridge be removed. His recommendation was referred to a committee and then the council adjourned until September. The absence of Capt. Dunham from the council this year was seriously felt on this occasion, for had he still been a member, no such action would not have been likely to occur. Before the council can now act, the removal of Canal street bridge will have been ordered by the war department. The city is going to fight the claim of the general government for control of the river and the case will go into the courts.

Canadian Passenger Traffic.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., July 23.—It was an unlucky inaugural trip the steamer Lora made on Tuesday of last week between Rochester and Alexandria Bay. In attempting to make the dock at Thousand Island park she struck what is known as the Oconto shoal and went on with sufficient force to put her bow out about eight inches. She had quite a number of passengers on board. She was released by the tug Seymour. The shoal is the same one which sunk the Oconto of the Chicago & Ogdensburg line some years ago. The Lora had been running between Buffalo and Cleveland.

Last week the steamer North King (formerly the Norseman) and Maynard had a slight collision on the river. The officers of the Maynard claim that the King's officers took no notice of the Maynard's whistles while the North King officials maintain that no whistles were blown and that the accident was not due to any negligence on their part but solely to the fact that the Maynard having approached too close to the larger vessel was sucked into her wake and bumped. The damage done was slight.

The transhipment of railroad iron here has made a boom for the 'longshoremen.. The steamer Rosedale loaded 1,000 tons last week for Port Arthur.

News of the untimely death of James O'Reilly,engineer of the steamer Campana on Friday last at Cleveland, was received here with sincere regret. Mr. O'Reilley was a native of Garden Island and one of the best engineers in Canada. The remains were interred in this city on Monday last.

The landing of steamers at the Thousand Island park on Sundays has raised considerable commotion among the shareholders. Superintendent Brown says no steamers will be allowed to land at the dock on Sundays hereafter. A conference has been held with the officers of the steamboat companies and they have concluded that they had no right to leave passengers at the park on Sunday. The charter as given by the state coutains a restriction to that effect. Director Searles says seventy-five per cent. of the lot and cottage owners are against having boats call on Sunday.

Capt. Craig, formerly of the Bay of Quinte steamer Hero, has purchased the steamer Swan and will put her in commission on the river. The number of steamers of all grades in the excursion business among the islands this season is unprecedented. Sunday outings down the river are patronized largely, the American travel having fairly begun. Last Sunday seven steamers were used to convey western tourists and local excursionists. Travelers come as far as Kingston by rail and take the Richelieu and Ontario navigation steamers to Montreal.

Building for the Central American Coast.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., July 23.—It now transpires that the steel twin screw tug building at Wheeler & Co's. is not for the Nicaragua Canal Company as has been previously announced, but is for Geo. D. Emery, of Boston. Mr. Emery is a large dealer in mahogany timber, from the Central American states, and the new tug which will be named the Yu Lu, (Spanish for Mahogany) is to be used in towing on the rivers of the Central American coast Mr. Emery is the owner of quite a large fleet of vessels engaged in carrying mahogany timber. The Yu Lu will be launched in about three weeks, and it is expected that she will be in New York City inside of two months.

A local paper announced a few days since that Capt. Davidson would soon commence work on another schooner for himself, but Capt Davidson pleads not guilty to the charge. Just at present he is engaged in an able bodied kick over a claim that the board of assessors placed valuations on his property out of all proportion in comparison to that of his competitors. He threatens to move out of the place unless it is reduced.

Send 75 cents to the MARINE REVIEW for a Binder that will hold 52 numbers.

Return for all Waterway Improvements.

In an article on "Highways and National Prosperity" in the Engineering Magazine for April, Edward P. North, C. E., 127 E. Twenty-third street, New York, shows that the Sault Ste. Marie canal alone gives a bountiful return for all river and harbor appropriations in this part of the country. He notes the opposition from some parts of the country to river and harbor appropriatious, in spite of the general knowledge that the fall in railroad freight rates has followed the deepening of the waterway from the northwest to Buffalo and is largely due to that increased depth. "Few conversant with such matters," he adds, "do not know that a freight of 25 cents per bushel was often paid on grain between Chicago and Buffalo before 1860, when vessels of 6 to 8 feet draft were employed, and now that vessels of from 14 to 16 feet can be used, grain is frequently carried between the two ports for less than two cents, as the carrying capacity of vessels increases nearly with the cube of their depth. But comparatively few appreciate either the volume of the freight carried or the economy secured in its transportation,even with our present reduced railroad rates."

"The total expenditures under river and harbor bills up to Jan. 30, 1889, from Niagara Falls to Chicago and Duluth and on the rivers running into the lakes, has been $28,038,590. As the ascertained saving on freight charges for the tonnage passing the Sault canal for the season of 1889 was $46,466,011, the improvement at Sault Ste. Marie returned to the country in one year through cheaper freights over 165 per cent. on the total national expenditures for improving the navigation of the upper lakes, and the estimated saving on the total lake commerce for the year was at the rate of 427 per cent."

"It may be of interest to say in this connection that the total appropriations for river and harbor improvements from 1789 to the present time have been $207,002,352, including the amounts covered back in the treasury, and the saving from the canal at the foot of Lake Superior returned in 1889 22.4 per cent. on the sum of these appropriations."

Wonderful Growth of the English Fleet.

England's supremacy in the shipping world is hardly appreciated. A statistical return just laid on the table of the House of Commons shows the wonderful growth of the English fleet. Notwithstanding the fact that many other countries have been extending their fleets, British tonnage continues to increase in as great a ratio, and England not only now carries a larger proportion of her own trade than in previous years,but also takes a half of the trade of Europe. Taking first the tonnage measurement of vessels of all nationalities using British ports it is found that the total has increased eight-fold in fifty years, that is to say, that whereas the aggregate tonnage of vessels entering and clearing from ports in 1840 was barely 9¼ millions, it is now over 74¼ millions, and the proportion of foreign tonnage is now, or was last year, as small probably as at any time during the present century. Fifty years ago the ratio of foreign to total was just over 31 per cent; ten years later it was 35, and in 1860 43.5 per cent. Then began the era of steamships and British owners more readily departed from the sailer than did foreign maritime nations. This fact is indicated in the tonnage of vessels entering and clearing British ports. In the thirty years following 1840 the total has been quadrupled, and the foreign tonnage, which had increased to 43.5 per cent in 1860 dropped to 32 per cent in 1870, and in 1880 it was but 28.6 per cent. of the whole. The proportion since then has not fluctuated greatly. The lowest percentage has been about 26, and in 1890 it was 27.3. While in ten years the aggregate tonnage has increased by 28 per cent., foreign ships carrying British goods has only increased 16.9 per cent. Of course nearly all nationalities have augumented their shipping property; but not all in the same ratio as Britian. In the case of the United States there has been, as is well known, a great falling off. In 1860 nearly 3 millions of American tonnage entered or cleared from this country, while last year the amount was only a tenth of the total. In the case of Austria too, there is a great decline. The most notable exception is Norway, which in 1860 only owned 13.5 per cent of the foreign ships entering British ports, while last year her share was a fourth of the foreign tonnage. Much is due to the adoption of steam.

While, as shown, British ships make up 72.7 per cent of the tonnage carrying British merchandise, the United States, owns but 22.5 per cent. of the tonnage trading to United States ports. In Russia the native-owned ships make only 7.3 per cent., having decreased in thirty years from 16.5 per cent. Norwegian owners are second to Britian in this respect, the proportion being 63.1, but there also outside owners have been making headway, as forty years ago the proportion was 75.2 per cent. With Sweeden the proportion is 33.7 per cent; Denmark which has been progressing, 52.7 per cent; Spain 43.1; Germany, which also has been moving forward, 42.4 per cent; France, 36.1; Holland 30.5; Italy 24.8; Portugal, 4.3

Notices to Mariners.

Engineer Noble of the Canadian marine service, engaged in repairing the Colchester reef light structure, has begun preparations for the establishment of new range lights at the head of Bois Blanc island to take the place of the private ranges now maintained there. These are the ranges used before picking up the Duff & Gatfield ranges, or Grosse Isle ranges going up and after leaving the latter coming down. It is probable that their location on the head of Bois Blanc will be changed somewhat, as the trees on the island under present conditions sometimes obstruct them from view and render them less valuable as day marks.

The light-house board has issued bulletin No. 2 of July 1 date, regarding recent changes in aids to navigation. These bulletins are issued in accordance with the plan adopted a short time ago of printing in pamphlet form each month the detail regarding changes in lights, fog signals, etc. throughout the country. The July bulletin contains no reference to changes on the lakes excepting the mark on Waverly shoal near Buffalo and the Saginaw river ranges, both of which have been announced in the REVIEW.

Commander Heyerman gives notice that owing to the sinking of the Pontiac a black spar buoy has been placed in 14½ feet of water off Palmer's point on the Sugar island side. Vessels drawing 16 feet can pass close to the buoy. When the wreck is raised the buoy will be removed.

In General.

The Canfield and East Shore Wrecking Line of Manistee, Mich., sends out as an advertisement a map of the lakes that will prove useful in the office of any vessel owner.

The pamphlet "Cost Per Mile" issued by the Vacuum Oil Company, Rochester, N. Y., has been prepared with great care and is something more than a mere advertising circular.

In the Canadian parliament, Monday, Mr. Tupper, in reply to a question by Mr. Fremont, as to whether the government proposed to obolish the duty on vessels for the relief of sick and distressed mariners, said that no decision had yet been arrived at, but inquiries were being made as to whether ship owners would not rather take care of their own sick mariners and thus escape the tax for the relief of sick and distressed mariners.

The bureau of statistics, treasury department, S. G. Brock chief, has just issued a report in which some owners of lake vessel property, who have been investigating business matters in the vicinity of Puget sound will be interested. It is entitled "Internal Commerce of the United States," but treats entirely of information concerning the industrial commercial and transportation interests of Alaska, Arizona, California, Nevada, Idaho, Oregon, Utah and Washington, or the states and territories known as the Pacific slope.

Record of Speed and Big Cargoes.

[*Masters or owners are invited to report improvement on this list.*]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company, of Milwaukee, 3,322 gross, or 3,737 net tons from Escanaba. Lake Superior—E. C. Pope, Dry Dock Navigation Company, of Detroit, 2,718 gross, or 3,074 net tons from Ashland, light draft.

Grain: W. H. Gilcher, J. C. Gilchrist, of Cleveland, 114,982 bushels of corn, Chicago to Buffalo; America, M. M. Drake, of Buffalo, 111,507 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line, of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hours; Saranac, Lehigh Valley Line, of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company	$100 00	$.....	$ 80 00
Champion Iron Company	25 00	.....	87 50
Chandler Iron Company	25 00	37 00	39 00
Chicago and Minnesota Ore Company	100 00	.....	100 00
Jackson Iron Company	25 00	90 00	100 00
Lake Superior Iron Company	25 00	52 50	55 00
Minnesota Iron Company	100 00	69 00	71 00
Pittsburg Lake Angeline Iron Co	25 00	.....	140 00
Republic Iron Company	25 00	29 50	30 50
Ashland	.....	.....	52 50

Ore is certainly being moved from the Lake Superior mines as fast as facilities will admit, and it would seem that the daily shipments are in excess of those ot a year ago. The aggregate of shipments from Escanaba, Gladstane, Ashland and Two Harbors on July 15 was 1,478,409 tons. The railway officials have not given even a hint of the shipments from Marquette, but the figures just quoted would indicate that some gain is being made on the two million ton loss with which the season started. On July 15 a year ago the shipments from all ports aggregated 3,440,432. The movement from Marquette this year added to the 1,478,409 tons known to have gone out from other ports would probably bring the total for all Lake Superior ports close to 2,000,000 tons. On July 15 Escanaba had shipped 850,000 tons, Ashland 305,524 tons, Two Harbors 271,179 tons and Gladstone 51,706 tons. Mines from which reports have been received show shipments as follows to July 15:

MINES.	TONS.	MINES.	TONS.
Ashland	73,892	Norrie	93,463
Aurora	25,432	East Norrie	43,174
Tilden	11,214	Eureke	5,244
Montreal, South Vein	11,785	Pabst	46,949
Palms	6,708	Ruby	593
Sec. 33 Bessemer	9,699	Sunday Lake	14 624
Carey	24,801	Ludington	51,706
Trezona	12,709	Minnesota Iron Co	151,633
Germania	3,008	Chandler	119,546
Mount Hope	20,712		

At the Champion Superintendent Walter Fitch will endeavor to find some system of cutting and blasting holes that will hasten the work of shaft sinking. With their ore pitching westward rapidly, the questions of keeping the openings ahead of actual mining is one of greatest importance, as here will be the deepest shafts in the iron mining districts of this peninsula. First there will be attention given to drilling the holes in V shape, a form tried in several shafts and tunnels of note lately made, and which were attended with excellent results. The V will occupy the center of the shaft and a block of ground about eight feet long will be lifted, after which holes bored vertically will take down the ground on the sides of the shaft. In these times of low prices and active competition it behooves the companies to study carefully every detail connected with their operation. The Champion is one of the most progressive mining enterprises in this region and results here obtained will be of importance to the many concerned.—Iron Ore.

Citizens of Duluth are about to vote on a proposition to bond the county for $150,000, the bonds to be given in exchange for for stock of the proposed Duluth, Mesaba & Northern Railway. Several meetings of business men have been held and the question of the city owning terminals forever to all railways is also being discussed as a substitute for the railway proposition There is no telling what the result will be but there is evidence in this agitation of a disposition to prosecute further developments in the mining regions. The Schlesinger iron road in the upper Michigan peninsula will be completed about Sept. 1, when it will be used by the Chicago & Northwestern for transportation of ore to Escanaba.

The supreme court of Minnesota has decided against A. J. Whiteman in his case against the Minnesota Iron Company, involving title to valuable mineral lands. Whiteman claimed that his application for lease was a prior claim but he was defeated in the lower courts and the decisions were sustained before the higher authorities. Considerable diamond drill work has been done on the property in question and it is thought that explorations will be resumed.

General Manager J. E. Hagey, of the Pennyslvania Iron Company's mines, consisting of the Norway, Currie and East and West Vulcan, has resigned, and has been succeeded by Assistant General Manager Kelly. Mr. Hagey goes to Johnstown. Pa., where he assumes the management of all the stores formerly owned by theCambria Iron Company, but which are now controlled by a syndicate of capitalists.

The management of the Dunn mine, Crystal Falls district, would ship 1,800 tons a day if the cars were to be had, but the movement is restricted ta 1,000 tons a day on account of the scarcity of cars. An output of 160,000 tons is figured on for the season. This is greater than last year's output.

Capt. Thos. Wilson and Messrs. Geo. L. Quayle and J. E. Upson of Cleveland, who are interested in the Union Iron Company, a corporation owning mineral property near Ely, Minn, visited their lands on the Vermillion range last week. They are the principal stockholders in the company.

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The Badger mine (Commonwealth company's new find) has begun shipping ore at the rate of 400 tons a day. A large amount of developmental work is steadily progressing at the new mine, including the sinking of another working shaft, stoping, etc., and another level is contemplated.

The old Iron River mine at Stambaugh is one of the Menominee range properties that will probably be allowed to rest for some time to come. The wet character of the mine, low grade of ore produced and high royalty demanded by fee owners are reasons for advancing this opinion.

The largest steam hammer in the world has been completed by the Bethlehem Iron Company. It has a stroke of 125 tons and will be used for forging 150-ton ingots into armour plates. The foundation is composed of steel slabs and white oak. The hammer is 90 feet high and the housings are each composed of a single 120-ton casting. The cylinder is 24 feet high and 76 inches diameter, and the steam chest consists of a 65-ton casting. The ram of the hammer is 19½ feet long 10 feet wide and 4 feet thick, the piston being 40 feet long and 16 inches diameter.

The business of the Babcock & Wilcox boiler company outside of the United States and Cuba will soon be managed by a company now being formed in England, after the financial plan now so generally followed by big concerns in that country. The capital of the new company is to be £240,000. The books of company, which have been examined by chartered accountants, show a profit of £167,260 for the past three years. Orders are now in hand for boilers to the extent of 25,000 horse power, the number supplied last year aggregating 46,412 horse power. The boilers are manufactured in Glasgow by arrangement with the Singer Manufacturing Company.

At the Royal Naval Exhibition a model of the coming five-day Atlantic steamer has been seen. It is the work of James and Geo. Thompson, Limited, the Clyde builders who put forth the City of Paris. No dimensions are given but it is thought they are about 630 feet length, 55 feet moulded depth, 73 feet beam. Nearly 40,000 h. p. will be required to drive such a hull the 23½ knots marked on the model. The screws are to be 20 feet diameter and have four blades. Two short masts are shown and ten machine guns are mounted.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

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The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to **36,203,606** *tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.*

Entered at Cleveland Post Office as Second-class Mail Matter.

MARINE writers on the lakes have made some startling claims regarding the speed of fast boats since the Goodrich steamer Virginia went into commission on Lake Michigan. The Goodrich line has, a fast boat, in its twin screw steamer, as well as a craft of more elegance than anything to be found under the American flag, but no one of any knowledge regarding the cost of displacing water will countenance the claim that she can make 23 miles an hour. The Cleveland builders of the boat will certainly not look with favor on such a report, as they did not guarantee for her a speed of even eighteen miles an hour. There is not a boat on the entire chain of lakes that makes twenty miles an hour in runs of any considerable distance. This speed is claimed for the side wheel steamer Frank E. Kirby, recently built by the Detroit Dry Dock Company, and Mr. F. W. Wheeler, the West Bay City builder who guaranteed 18 miles an hour for the City of Chicago, says that he is informed by the owners that she has shown, after her rebuild, 21 miles an hour, but these claims are all of an extreme nature. Such freight boats as those of the Minnesota Iron Company, the E. C. Pope and the Emily P. Weed, now leading the ore and grain carriers, are sometimes credited with more than 14 miles an hour loaded, but these assertions do not come from the men who manage them. It must be remembered that to double the speed takes eight times the fuel.

"MR. BLANCHARD is particularly enthusiastic over the scheme for a 20-foot channel throughout the entire lakes," says one of the reports from the congressional party now at the head of Lake Superior. "He thinks that such a channel would ultimately result in a demand for, and the construction of, a waterway of similar proportions direct to the seaboard." This is an expression of encouragement from the statesman who is to be the chairman of the next river and harbor committee. Mr. Blanchard will soon find many able supporters in the matter of a waterway to the seaboard, as the leaders in the lake marine are about to take up the great question of a radical enlargement of the Erie canal. For the present, however, appropriations are needed to make all of the connecting channels of the lakes conform to the size of the new Sault canal and Hay lake channel, and it is to be hoped that the coming Democratic congress will not delay these legitimate improvements. The story has gone out that the new party in the House of Representatives proposes a policy of retrenchment, in contrast with the expenditures of the last congress, and that no river and harbor bill will be passed. Mr. Blanchard, and other liberal leaders in his party, can do much to overcome a disposition of this kind toward the national improvements now nearing completion in these waterways.

THE war department is acting in a very strange manner regarding the purchase of the Portage lake canals and it would seem that there is unnecessary delay in the work, notwithstanding its importance to the shipping of that district, in the dredging and other benefits that would follow the transfer. The delay came about through the failure of one of the Portage companies to give valid title to lands adjoining the strip through which the canal runs. This title can only be obtained through quit claims deeds from certain parties now in Europe. The adjoining lands would be valuable in the enlargement of the waterways but it is not certain that they constitute a part of the property required to be conveyed under the act for the purchase of the canal. Under these conditions the attorney general has decided that the department can accept the canals, leaving the question regarding adjoining property to be settled later, and it was understood on the lakes that with such an opinion from the attorney general, Acting Secretary Grant and General Casey, in charge of the work would go ahead with the transfer. They have not done so, however, and it is now a question whether the transfer will be made this summer or not.

Great Pumping Power.

The current issue of Engineering of London illustrates a form of triple expansion duplex pumping engines recently made for a South Wales colliery company. They are placed at a depth of about 800 feet, and deliver water at one direct lift to the surface. The cylinders are proportioned so as to give a practically uniform effort upon the pump pistons throughout the stroke, the variation being about 15 per cent. Great steadiness of working is thereby secured. The high-pressure cylinders are fitted with variable cut-off gear, by means of which the cut-off may be varied from half to full stroke. The pumps are of the externally-packed, plunger type, and are capable of delivering 20,000 gallons per hour to a height of 1000 feet. The engines are fitted with jet condensers and single-acting air-pumps. The builders, Fielding & Platt of Gloucester, have made engines of somewhat similar design delivering water from a depth of 1800 feet at one lift.

The mean speed of the new Thornycroft torpedo boat just completed at Poplar, England, for the Brazilian navy, was 25.858 knots in six runs on the measured mile, while for a continuous run of two hours' duration the speed was 25.387 knots—the highest ever attained and continued for the time. The builder only guaranteed 24 knots.

The latest plan to improve the draft of the furnaces of ocean steamers is to increase the height of the smokepipes. The new steamer Scot of the Cape Mail Line is provided with smokestacks 120 feet high above the grates, being the loftiest pipes ever put into a steamer.

Around the Lakes.

Richard Beaubien of Detroit has bought the harbor tug Fannie L. Baker. She is valued at $5,000 and for her he gave the tug Challenge and $2,000 to boot.

Capt. Falcon of Chicago has taken all the ore out of the propeller Kasota sunk in the Detroit river and is putting casks into the wreck with a view of floating it.

Capt. R. Latravers, who has been in the St. Lawrence river service since boyhood, died at Sorel a few days ago. He was seventy years of age and had been employed by the Richelieu & Ontario Navigation Company for more than forty years.

The steamer Ossifrage has probably found a profitable trade for the season. She has been chartered by Mr. Wheeler to the Gilman brothers of Detroit, who have built up a pleasure resort on Fighting island, Detroit river, and will run the boat between Detroit and the island.

Recently the Sheriffs Manufacturing Company supplied the steamer Thomas Davidson with a wheel similar to the one which has given such satisfaction on the big steamer Helena. The Davidson makes as good time now with seventy-five revolutions as she did previously with ninty-five revolutions.

The secretary of the treasury has awarded a silver life-saving medal to Mabel Mason, daughter of the keeper of the Mamajuda lighthouse, Detroit river, for heroic conduct in saving Thomas Jones from drowning in the river, May 11, 1890. This is the young lady who was honored in a similar manner by the Cleveland lodge E. M. B. A. last winter.

Interest in one of the first propeller wheels on the lakes has been revived by its removal to a secure place at the Sault lock last week. It was taken off the propeller Independence, the only boat of her class forty years ago. The wheel is five feet diameter, has a boiler iron rim encircling the hub, which has three blades. The row of buckets was removed when the wheel was changed.

Collector of customs Glazier of Erie recently fined the schooners Ben Brink and Oades $200 each for not displaying the proper light at night as they lay at anchor in the bay, and the steam tug Thomas Wilson, owned by Hall & Co. of Ogdensburg, Joseph Richards master, has been fined $1,000 by Collector Lyman, for failing to report her arrival at Oswego from a foreign port.

The tug Pier, building for the department of docks of New York, by the Union Dry Dock Company of Buffalo is a good lump of a boat. She is 160 feet long, has triple expansion engines and is housed all in with pilot house above the deck. This is better suited to the needs of New York harbor than the style in vogue here. She will not be launched for some time yet.—Buffalo Express

The William Edwards shows a big saving in fuel and better speed since an expenditure of about $10,000 was made in compounding her machinery, giving her new boilers and other repairs at the yard of the Cleveland Ship Building Company. She towed the big schooner Golden Age from Chicago to Buffalo in about 4½ days. The Golden Age wet 4,041 bushels of her oats cargo, through a leak in her center-board box.

It will probably cost $15,000 to repair the schooner Sage, released last week from Hammond's bay where she had lain for nearly two years. The boat is owned by John Kelderhouse, Thomas Maytham and others of Buffalo, who bought the wreck and gave Henry McMorran of Port Huron the ore in her for the wrecking work. The wreckers took out 1000 tons before the boat was floated. She will be repaired at Buffalo.

David Bell of Buffalo launched another tug a few days ago for Contractor Dunbar, who is engaged in cutting the big channel through Hay lake. She is a duplicate of the Sheridan, built for the same owner by Mr. Bell. Her length is 60 feet, beam 14 feet and she is not to draw over six feet of water. Her engine is 14x16 and and her steel boiler 5 feet 3 by 9 feet. She is about ready for service and will be used in the Hay lake work.

The transfer of the steamer Ohio, dated Oct. 4, 1890, by Clark L. Ring, Lucius P. Mason and Michael Madden of Saginaw and J. T. Johnson of Sandusky to Thomas P. Crosby, was put on record at the Chicago custom house last week. The Ohio was sunk in the Soo river last summer and was afterwards raised. She was insured in Capt. Crosby's companies. She is about to be put in commission and the transfer had to be recorded. The purchase price was given as $51,075.

Boats trading to Two Harbors, wild carriers as well as those of the Minnesota line, are given wonderful dispatch and its the same every day in the season. The Maruba went to the dock on Sunday recently and took on 2,115 tons. In two hours and twenty-three minutes after arriving in port she was again on Lake Superior. McDougall's barges are loaded in three hours at this port and all other boats are given similar dispatch.

Chicago's harbor master has been instructed by the corporation council to arrest all masters whose vessels when at dock blockade the river, and who refuse to move them when requested to do so by the harbor master. This order may give rise to legal actions, as some of the dock owners who have vessel interests will probably resist the attempt to have them move their vessels for general convenience when taking on or discharging cargo.

The Keweenaw, the pioneer vessel of the new freight line of steamships between New York and San Francisco, is expected to make the run in 55 days. She has a full cargo of 3,500 tons. Two vessels which will follow the Keweenaw at intervals of 40 days are the Mineola and Montauk. Both are British built vessels, but have been purchased by the new company. The Mineola arrived at New York from Swansea July 12, having made the run in 10½ days, the best record for the distance ever made by an ocean freight ship.—Marine Journal.

The Detroit, Belle Isle & Windsor Ferry Company has been reorganized, Capt. Pridgeon having sold his stock which amounted to a controlling interest, to W. E. Campbell, Darius N. Avery, Horace W. Avery, G. E. Avery and S. S. Babcock. The price paid is thought to be $100,000 and this amount does not fully represent Capt. Pridgeon's net profits during the six years he has held the stock. A new ferry steamer will soon be ordered from the Detroit Dry Dock Company and the service will be improved.

Another vessel, the schooner Thomas Howland, bound to Escanaba light for ore, was ashore at "Death's Door," the entrance to Green bay. She went on the rocks while passing into the bay in thick weather. The vessel owners have been pleading with congress for a light on Eleven-Foot shoal at this point, or the substitution of light-ships for the permanent structure project, which has as yet secured an appropriation of but $60,000. Unless this appropriation is increased by the next congress the lightships should be ordered from the money already appropriated.

The Sault Water Power Project.

The water power and canal project, into which the town of Sault Ste. Marie, Ont., entered with great boasting of future greatness a short time ago, has taken on the appearance of a boom scheme. Property owners are hesitating over the proposition to bond the town for $100,000, to be contributed toward the total cost of $250,000, and a spirit of mistrust is shown in newspaper interviews concerning the whole affair. The most serious obstacles to the completion of the work is heavy indebtedness to the provincial government and the fact that the right of way has not been paid for, but in face of all this a contract has been made for the excavation. The opinion is freely expressed that the project will be a "big thing" for the Sault in a different sense than promised by the promoters. Investors in the scheme are reminded of the fact that $100,000 has been sunk on the American side of the river in the same kind of a project, and that money cannot be borrowed to complete the work in a country that has a market of 65 millions, while Canada has but a 5 million market to supply. Water-power in more favorable locations is used as an inducement to have manufacturers accept bonuses. Sault citizens may find their undertaking an elephant that cannot be sold, lost or given away.

District Deputies in the M. E. B. A.

James Henry Harris of Chicago, national secretary of the Marine Engineers' Beneficial Association, has announced the names of district deputies, as promulgated by the national president in accordance with instructions from the association. District deputies on the lakes are: J. B. Wood, Cleveland; Frank Cody, Detroit; Thos. F. Dowd, Chicago; H. F. Spencer, Green Bay; F. B. Barrows, Duluth; George R. Stean, Buffalo; J. H. Fitzgerald, Port Huron; Allen McKee, Manistee; J. R. Blanchett, Bay City; W. E. Elliott, Milwaukee.

Cleveland Matters.

Attorney S. H. Crowl is now located with Goulder & Lee.

Newton Woodward, a tug engineer of many year's service in Cleveland and Ashtabula, met death under a railway train at the latter place, Monday.

The steamship E. C. Pope goes light to Gladstone for ore on her present trip and will undoubtedly bring down a large load, probably 3,200 to 3,300 gross tons.

Capt. A. C. Chapman of the Menominee steamer Saxon has been transferred to the new steamer Roman and Capt. Stephan Lyons, formerly in the propeller New York, has been given command of the Saxon.

In 1874 there were owned in the Cleveland customs district 469 vessels, as compared with 266 at present. But the total gross tonnage of these 469 boats was only 87,222.02, while that of the 266 boats is 209,876.43.

The barges L. W. Drake and American Giant, which have lain idle here all season, were seized by the United States marshal a few days ago. They were libeled under an attachment obtained by the Clark Dry Dock Company of Detroit for $990.14 against the L. W. Drake, and $1008.42 against the American Giant for dry dock charges and repairs.

Mr. F. W. Wheeler said in Detroit a few days ago that he had a letter from Graham & Morton, for whom he built the steamer City of Chicago, now running on the Chicago & St. Joseph passenger route, saying that the boat since being lengthened carries 2,000 passengers and has shown a speed of twenty-one miles an hour. This should certainly be gratifying to the builders after their unfortunate experience with the boat.

Several vessels are finding employment in carrying ice to Cleveland from Lake Michigan. The Knickerbocker company is engaged in shipping about 10,000 tons from Harbor Springs, on the east shore of the lake, and Sibree & Overbeck of Sturgeon Bay have a dozen or more cargoes in store at that point that will be shipped if a profit can be found in one cargo, moved a few days ago on the schooner J. A. Gilmore. It is not probable that the trade will be very heavy, however, as some Cleveland consumers claim they can get ice "on rail" here at $2 50 a ton.

The Mutual line steamer Corsica has just finished two trips from Ashtabula, one to Escanaba and the other to Ashland, the total time on both, including loading time at both Escanaba and Ashland, being 9 days, 17 hours and 20 minutes. The round trip between Ashtabula and Ashland, dock to dock, was made in 5 days, 14 hours and 30 minutes, and 7 hours and 20 minutes of this was spent in loading at Ashland, which is about double the ordinary loading time. The Escanaba trip was make in 4 days, 2 hours and 50 minutes, 8 hours of which was spent in loading. On the Escanaba trip 2,607 gross tons of ore was brought down and on the Ashland trip 2,200 tons.

A short time ago the steamer Queen of the West, owned in the office of Palmer & Co., ran into the Columbus street bridge, damaging the structure, killing one person and injuring two or three others. The master of the boat, Benjamin Chambers, had been given the proper signals by the bridge officials and was proceeding toward the bridge very cautiously when it was found that the clamp steadying the bridge on one of the abutments could not be removed. The signal for the boat to pass was hauled down and a danger signal run up but it was too late and the boat could not be stopped. These facts were brought out in a police court trial and the vessel master was discharged without hesitation. Now the county coroner comes in with a verdict on the accident and in it negligence is charged to Capt Chambers. There is no thought of the court verdict being changed by any higher authority, but it is unfortunate that the owners of the boat may be subject to the annoyance and expense of further litigation on account of the coroner's verdict.

An Auxiliary Gas for Steam.

The tug Edwin D. Hartly, having an 85-foot steel hull and a compound engine, was recently fitted with an aqua ammonia appliance at the shipyard of J. H, Dialogue, Philadelphia. The results were very satisfactory in the saving of fuel and in the power obtained. The device is used as an auxiliary aid and by closing two valves can be shut off, leaving the engine to use steam only. The generator or ammonia boiler is the important part of the machine In it the aqua ammonia is heated by steam from the steam boiler through a pipe connected with the heating pipes inside the generator. From the top of this generator leads a pipe, which conveys the ammonia gas from the upper part of the generator into the high-pressure cylinder. This main pipe has a valve for shutting off the ammonia gas when desired. The steam gives part of the heat to the aqua ammonia in the generator and becomes condensed, and this condensed steam is then returned to the boiler through the hot water pipe. Experiments with the ammonia appliance in stationary engines show a saving of 50 per cent. in fuel. The Inland Marine Company has been formed to equip boats with this apparatus and it is said that one of the new cruisers as well as an ocean liner will be supplied. William B. Reaney, M. E., Philadelphia, placed the plant in the tug mentioned.

History of Steam Navigation.

1787. Fitch raised $800, and in February began a boat of 60 tons, 45 feet long by 12 feet beam, with six oars or paddles on each side. The engine had a 12-inch cylinder. In May 1787, a trial trip revealed some defects, which were corrected, and on August 27th of the same year a successful trial trip was made at Philadelphia. Patents were obtained in Pennsylvania, New York and Maryland. About the same time Fitch had a controversy with Rumsey concerning priority of the invention.

1788-1790. Fitch built larger boats, which ran regularly in 1790 between Philedelphia and Burlington, making as high as seven miles an hour.

1791. Fitch received a Uuited States patent August 26th.

1793. Robert Fulton (born at Little Britian Lancaster County, Pa., 1765, died at New York 1815) proposed plans for steam vessels, both to the United States and the British governments. In 1779 when only fourteen years of age, he experimented with paddle wheels turned by hand on the Conestoga river. In 1802, while in France, he made drawings and a model of a side-wheel steamboat. In 1803 he had a boat built by M. M. Molar, Bordel and Montgolfier, on the Seine, and it made 4-½ miles an hour on its trial, August 9. The water tube boiler of this boat, known as Barlow's boiler, is still preserved in the Conservatoire des Arts et Metiers, in Paris. In 1804 Fulton ordered from Boulton & Watt an engine from his own plans, 2 feet in diameter and 4-foot stroke. This engine was completed in 1806, and shipped to the United States, Fulton having preceded it. He immediately contracted for a hull in which to set it up.

1807. In 1807 the engine was fitted to the Clermont, the hull of which was 133 feet long, 18 feet wide and 9 feet deep, a far larger steam vessel than any hitherto constructed. In August 1807, it made a successful trip to Albany, 150 miles, in 32 hours, returning in 30 hours. Its success was such that it was soon afterward run as a regular passenger vessel between New York and Albany, and the era of steam navigation was at last begun. In 1808 two new steam vessels, the Car of Neptune and the Paragon, each of which were nearly double the size of the Clermont, was built by Fulton.

The Spanish story of 1543 has been settled by Mr. Botsford, who has shown that it had been investigated in Madrid in 1858 and it was then proved that Blasco de Garay's boat had been moved by men secreted in the hull. He also disposed of Symington's claim by showing that if an unsuccessful experimenter who abandoned his work in despair is entitled to be ranked with Fulton, then Symington must give place to John Fitch, who both antedated him and more nearly reached success. But the higher honors must be given to Fulton, as the inventor, the engineer and the successful business man by whose labors steam navigation became an accomplished fact.

There are 2,100 men now employed by the Cramps, and the weekly pay roll averages $30,000.

Affairs in Admiralty.

In a libel for damages growing out of a boiler explosion, through which a seaman was killed, Judge Toulmin of the district court, Alabama, makes some interesting rulings. Injury to a seaman from explosion of a steam tug boiler, and due to negligence of the owner of the vessel, is actionable in admiralty. A steam boiler explosion causing injuries is *prima facie* evidence of negligence on the part of owners and officers; but this may be rebutted by showing due diligence in supplying suitable machinery and officers and seamen of ordinary competency. If one person is injured by the negligence of another engaged in the same employment, the employer is not liable if he has not been negligent in their selection, and has provided means and appliances adequate for their work. A cook and engineer on a river steamboat, exercising no authority the one over the other, and both subject to the master, are fellow servants, and the cook cannot recover from the owner for damage caused by the engineer's negligence.

A collision case decided by Judge Benedict, of New York, contains some new features. A tug with a tow on her port side was crossing the course of a ferryboat at night, the ferryboat having the tug on her starboard hand. The tug blew one whistle to the ferryboat, received no reply, but kept up her speed ; blew again to the ferryboat, and again receiving no reply, rang to hook up the engine, in an endeavor to pass ahead of the ferryboat. Collision followed between the latter and the tow. The court held that the fact that no reply to her signal came from the ferryboat was notice to her that her signal had not been heard, and it was her duty to stop at once. The vessels being on crossing courses, and the ferryboat having the tug on her starboard hand, the tug claimed that it was her right to keep on, and the duty of the ferryboat to stop. As the vessels approached, the red light of the tug, for some unexplained reason, disappeared from the view of those on the ferryboat. "If the red light of the tow was not displayed" the court said "the ferryboat was under no obligation to stop, but was justified in proceeding as she did."

Judge Billings of the district court, Louisiana, in a case decided a short time ago held that contract with the owners to supply their vessels for a period of a year with all the provisions they might require while in the port where the supplies were to be furnished, is not a maritime contract and a court of admiralty has no jurisdiction of a suit for damages for its breach by the shipowners.

The estate of W. B. Morley, Marine City shipbuilder, foots up $157,000, of which $100,000 is real estate and $57,000 personal property.

Official Numbers and Tonnage.

The bureau of navigation, William W. Bates commissioner, assigned official numbers and tonnage to the following lake vessels during the week ending July 18: Steam—Roman, Cleveland, 2,348.43 tons gross, 1,885.23 net, No. 110,932; Preston, Milwaukee. 472.28 tons gross, 384.31 net, No. 150,537; Louisa, Cleveland, 18.65 tons gross, 9.33 net, No. 141,154. Sail - Compeer, Cleveland, 7.16 tons gross, 6.80 net, No. 126,764; Monarch, Cleveland, 6.11 tons gross, 5.81 net, No. 92,343.

Lake Chautauqua—The Queen of Summer Resorts.

At a lake of cool crystal water, located among the beautiful highlands of the Empire state, over one hundred and fifty thousand people seek each summer season the delightful rest always found in that wholesome atmosphere. Chautauqua—the famous resort—located between fourteen and fifteen hundred feet above the ocean, has unsurpassed facilities for boating, fishing and bathing. When these pastimes are combined with the advantages made possible through the educational and religious organizations, which make Chautauqua lake their summer headquarters, is it surprising that each season, thousands frequent its shores.

With hotel accommodations capable of delighting the tastes of the most fastidious and boarding houses where families may secure commodious rooms and excellent service at reasonable rates, should it be wondered at that people flock from the smoke, dust and heat of our cities to enjoy the pleasures and benefits obtainable on the shores of this "Lake of Springs."

Tourists selecting the Nickel Plate route to this queen of summer resorts, will find accommodations desirable in every appointment. Excellent connection is made for Chautuqua lake at Brocton Junction, N.Y., and from Mayville, N.Y. any point on the lake may be reached via boat or rail. Passengers holding tickets via Nickel Plate to Niagara Falls, may secure stop-over at Chautauqua free of charge.

Be sure your tickets read via the Nickel Plate. July 30

NIAGARA FALLS AND TORONTO.—First grand excursion to Niagara Falls and Toronto, Saturday, Aug. 1. Special train leaves Central passenger station at 7:45 p. m. $3 to Niagara Falls $4 to Toronto. Tickets good returning up to Aug. 6, with privilege of stop-over at Jamestown or Lakewood. Special train returns from Falls, Aug. 2. Secure sleeping car space at 141 Superior street, or depot on South Water street. J 30

Remember the excursion to Pittsburgh Saturday, July 25—Kossuth Aid Society—only $3 for round trip. Secure tickets of committee, or 141 Superior street and depot, South Water street. J 23

Commercial Union Assurance Company, Limited,

OF LONDON.

INLAND MARINE DEPARTMENT.

DAVID VANCE & CO.,

General Agents,

MILWAUKEE, WIS.

INSURES HULLS, CARGOES and FREIGHT.

Local Agents at all Lake Ports.

ERIE OIL COMPANY,

HIGH FLASH. ERIE, PA., HIGH VISCOSITY.

MANUFACTURERS OF THE

Monarch Valve Cylinder and Engineers Valve Oils,

THE MOST PERFECT CYLINDER OILS FOR MARINE USE.
EVERY BARREL GUARANTEED.

Insurance Company of North America.

INCORPORATED 1794.

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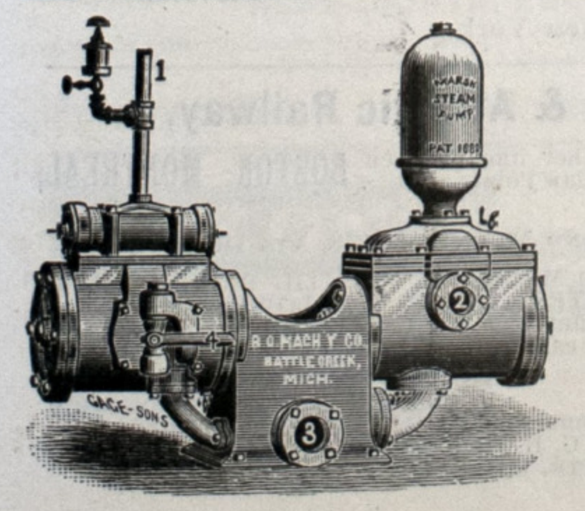
CHARLES PLATT, President. WILLIAM A. PLATT, Vice-President.
EUGENE L. ELLISON, 2d Vice-Pres't. GREVILLE E. FRYER, Sec'y & Treas.
JOHN H. ATWOOD, Assistant Secretary.

Capital, paid up in cash..... $3,000,000 00
Assets..... 8,951,518.83



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Absolute Actuation and Regulation Without Use of Tappets, Levers or other Mechanical Connections.

FOR MARINE AND STATIONARY BOILERS.

Smaller Sizes With or Without Hand Pumping Attachment.

Exhaust Returned to Boiler. Heats Feed Water Forty to Fifty Degrees, according to tests made by Prof. M. E. Cooley, of the University of Michigan.
Steam Valves Actuated by Direct Boiler Pressure.

Has Fewer Wearing Parts than ANY OTHER Steam Pump.

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DETROIT SHEET METAL & BRASS WORKS, Detroit, Mich. H. P. TOBEY, Toledo, O.
or BATTLE CREEK MACHINERY CO., Manufacturers, Battle Creek, Mich.

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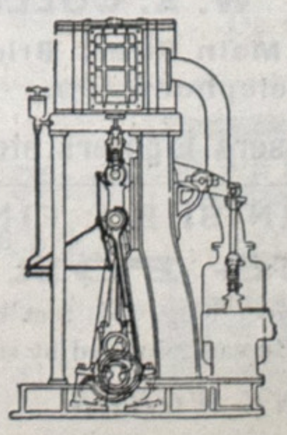

During the past three years hundreds of marine engines of from 2,000 to 4,000 h. p. have been served, as well as high speed electric light engines.

RESULTS:

Sure control of Crank Pin.
Stoppage of Lard Oil account.
Perfectly clean Engine

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Dark lines indicate apparatus.

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Boston and Lockport Block Co.'s Patent 5-Roller Bushed Blocks. Telephone 314. SEWELL & DAY'S BOSTON ROPE.

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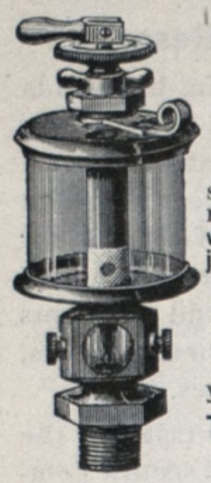

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Convenient to fill.

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Flow of oil can be instantly shut off by simply moving the lever down—**without disturbing the adjustment.**

Also made Double and Triple Sight feed for Marine Engines.

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The Wm. Powell Co.,
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ENGINEERS ONCE USING "SINCLAIR" BRAND KEEP TO IT

PURE LARD OIL ONLY

SEND FOR FREE SAMPLE TO THE MANUFACTURERS, WHO GUARANTEE ITS ABSOLUTE PURITY.

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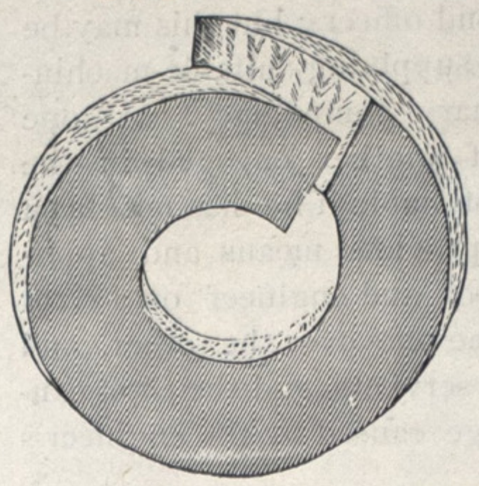

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Pat'd June 1, 1880—The Original Ring Packing.

For Piston Rods, Valve Stem of Steam Engines, Steam Pumps, and especially adapted for Marine Engines and Electric Light Plants.

☞ In ordering, give **exact** diameter of Stuffing Box and Piston Rod or Valve Stem.

Self-Lubricating, Steam and Water Tight.

Less friction than any other known Packing. Never grows hard if directions are followed. Does not corrode the rod. **Every Package Fully Warranted.**

N.B.—This packing will be sent to any address, and, if not satisfactory after a trial of 30 days, can be returned at our expense. None genuine without this trade-mark and date of patent, stamped on wrapper. **All similar Packages are Imitations, and calculated to deceive.**

THE GOULD PACKING COMPANY,
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VESSEL AND MACHINERY EXCHANGE.

Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 510 Perry-Payne Building, Cleveland, O.

58—Crosby Indicator, used only four times, for sale cheap.

63—DREDGE—At auction Wednesday, July 1, 11 a.m., at a point a short distance west of Willow street bridge, o d river bed, Cleveland.

64—For Sale at a Bargain—Steamboat 78 feet over all, 18 feet beam; double engines; hull in first-class condition.

65—For Sale Cheap—Two 10 x 10 Marine Engines with two 4 feet 4 inch wheels; good shafting, heater, boiler, steam pump and connections; or will exchange for small yacht or real estate.

66—Steambarge that will carry 200 tons wanted for balance of season, or longer.

67—WANTED—To purchase a tug suitable for fishing purposes 60 to 80 feet long, engine 10 to 12 square; must have good deck room and be in good condition.

1867. PERFECT SATISFACTION GUARANTEED. 1891.

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Manufacturers of Strictly Pure and Acidless Lard Oils, specially adapted for Steamboat use.

Will furnish Brand free for Ship Chandlers or other dealers who desire their name and address on packages.

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NEWLY FINISHED, FINE MODEL, FAST

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The Champion of all Fire Extinguishers!

Just the Thing that is Wanted on Every Vessel!

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Black Cloud Chemical Fire Extinguisher Co.:

GENTS: It affords me great pleasure to testify of the great work your extinguisher does. I have four of them on board and for their simplicity of handling, as well as quickness of extinguishing a fire, they have no equal. Yours truly, CAPT. H. H. HICKMOTT, Schooner E. B. Palmer.

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	Arrive East.	Depart East.
Buffalo Passenger	10 40 AM	10 45 AM
Chicago Passenger	9 20 PM	.....
Local Freight	4 00 PM	.....
WESTWARD.	Arrive.	Depart.
Chicago Passenger	.....	6 30 AM
Fostoria Passenger	6 40 PM	7 00 PM
Local Freight	3 50 PM	6 00 AM
Lorain Accommodation, Departs		5 10 PM
Dover Accommodation, Departs		1 30 PM and 5 10 PM

All trains daily except Sunday.

ERIE RAILWAY.

	Arrive.	Depart.
Youngstown Accommodation	*7 15 AM	†6 00 AM
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New York & Pittsburgh Limited	*9 55 AM	*2 55 PM
Mantua Accommodation	*7 20 PM	*4 20 PM
Youngstown Express	†9 10 PM	†6 00 PM
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THE ONLY LINE TO ST. PAUL AND MINNEAPOLIS, VIA DULUTH.

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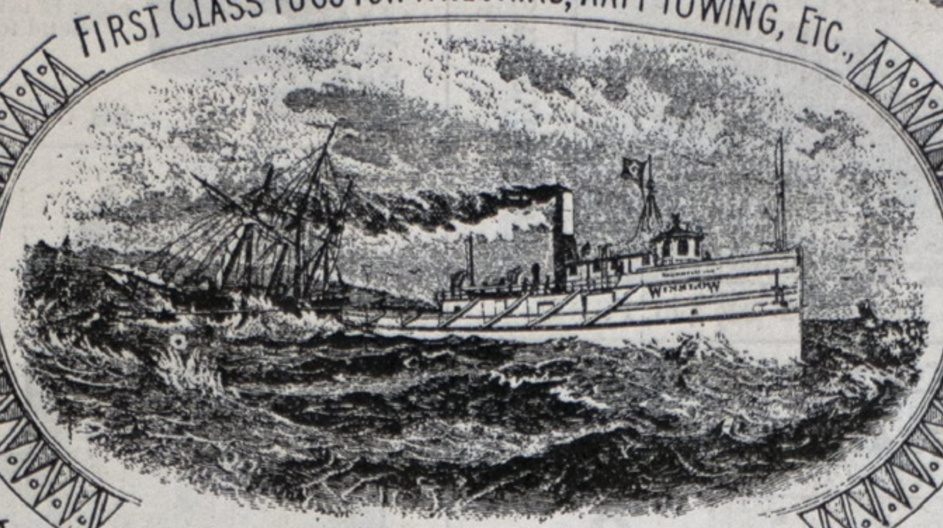

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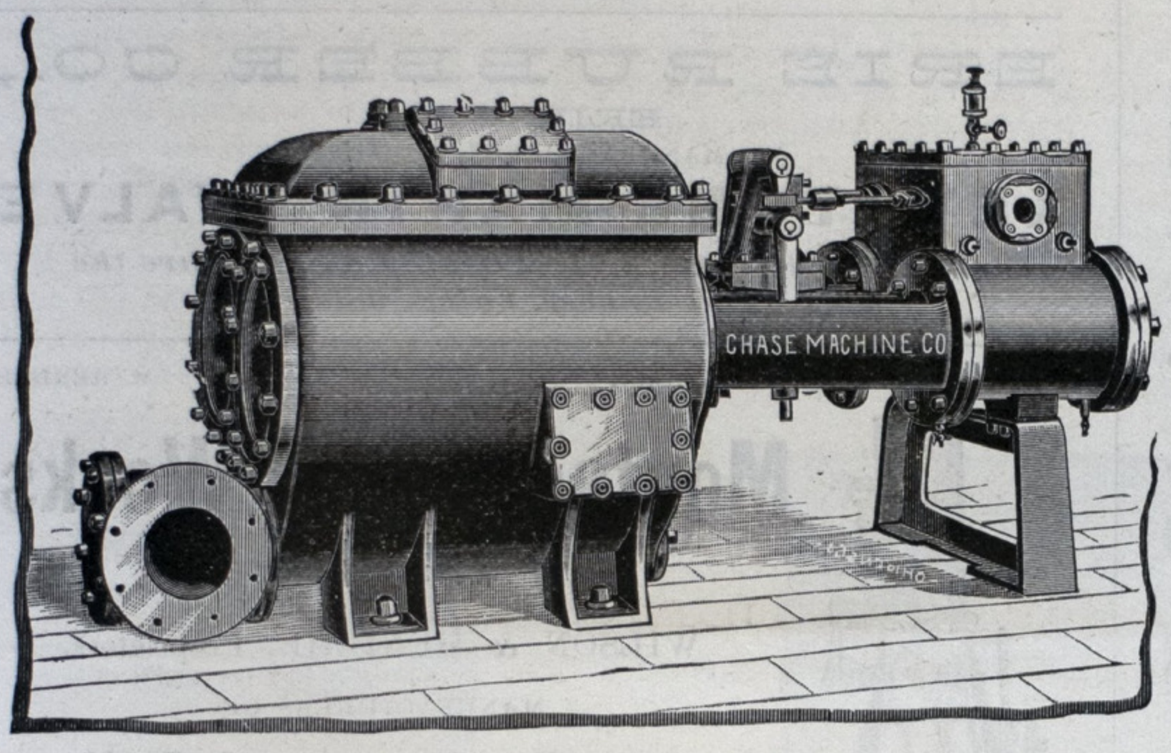

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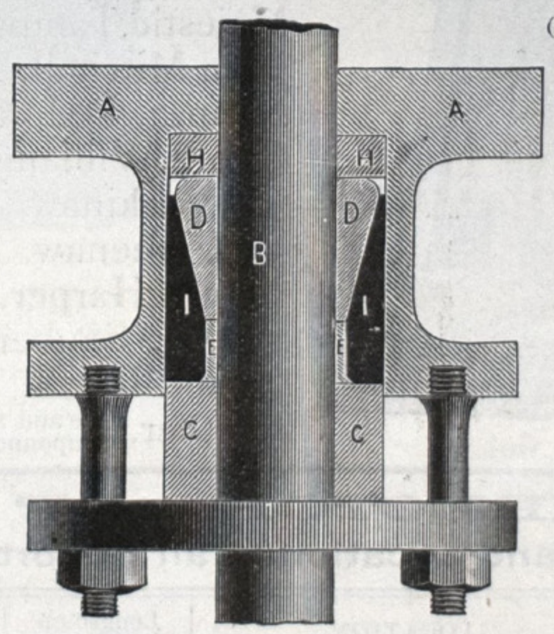

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Can be applied **without disconnecting** the rod, prevents blowing or leaking of steam, cutting of rods or the blistering or rusting of rods when engine is not in use.

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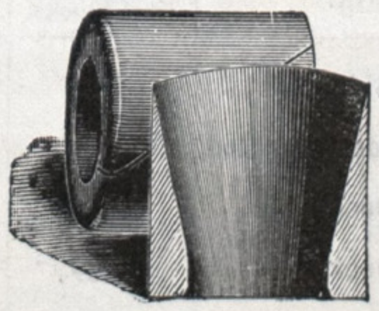

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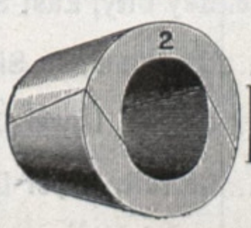

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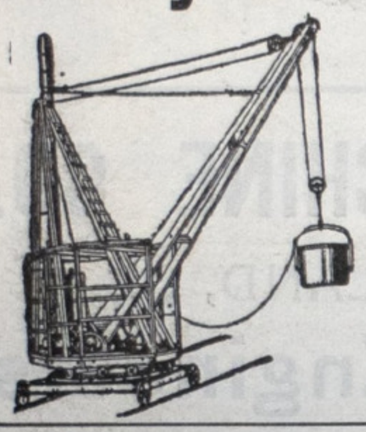

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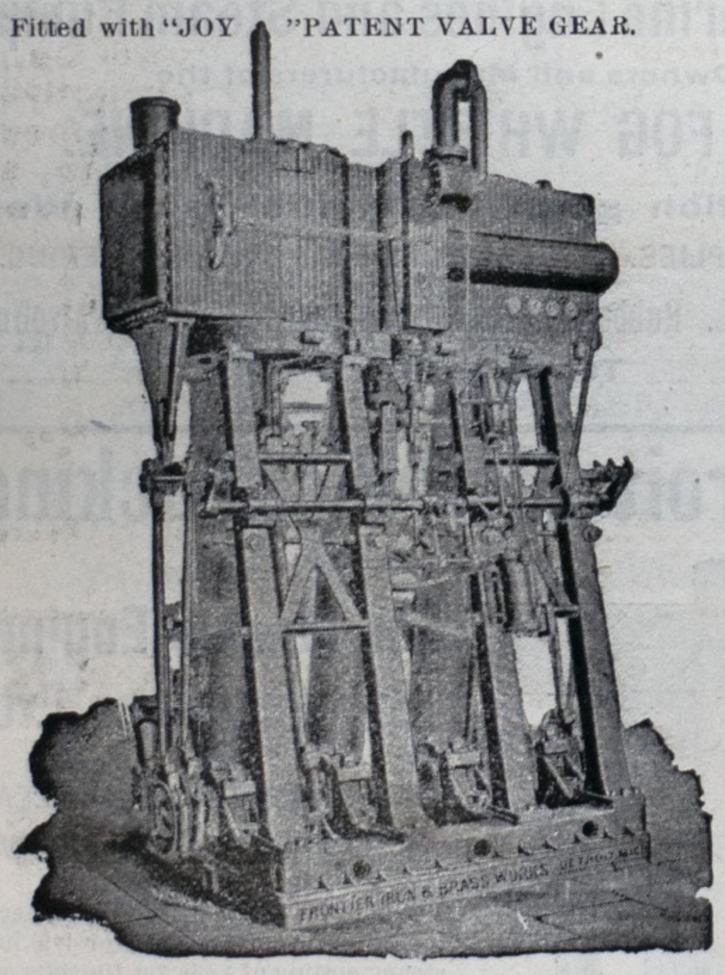

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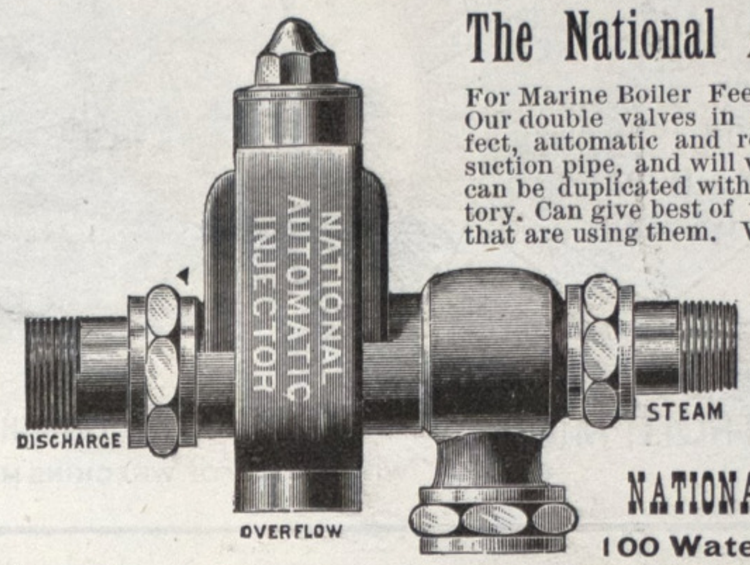

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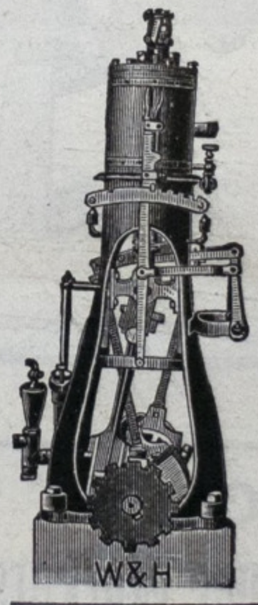

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Dock will admit vessels of 1200 tons and boxes will lift 350 ton vessels. Yard is fitted with a large spar derrick, and a stock of spars always on hand.

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